SEQUENCE LISTING

<110> Tissot, Ghislaine
        Dufourmantel, Nathalie
        Garcon, Frederic
        Ferullo, Jean-Marc
        Pelissier, Bernard

<120> Fertile Transplastomic Leguminous Plants

<130> 05500-00148

<140> US 10/538,130
<141> 2005-06-06

<150> PCT/EP03/015007
<151> 2003-12-08

<150> FR 02/15490
<151> 2002-12-06

<160> 41

<170> PatentIn version 3.3

<210> 1
<211> 1362
<212> DNA
<213> Glycine max

<400> 1
gatcaatcac gatcttctaa taagaacaag aaatcttttt cgcgatcaat ccttttgtcc   60

cattcttcaa taatcagaaa gatccttttc aatcaagttt gaattttttc gtttggaatc   120

aggactcttc tactgcattt ttatttactt tttttttatt tcttttcttc catcattcct   180

taactcccac aaggtttggt cctgtagaat ctgacccatt tcatcattga gcgaaaagta   240

cgaaaaaaat cagatcgatt tttcgaccaa aagtactatg tgaaatcctc ggttttttcc   300

tctttctcta tccctatctc gtaggtagag cgtttgaatc aatagagaac cctttcttct   360

gtatctgtat gaatcgatat tattacattc caaaattcct tcccgatacc tcctaaggaa   420

ccgaattgga tcccaaattg acgggttagt gtgagcttat ccatgcggtt atgcaccctt   480

cgaataggaa tccattttct gaaagatccc ggctttcgtg cgttggtggg tcttcgagat   540

cctttcgatg acctatgttg tgttgaaggg atatctatat gaaaagacag ttctatttct   600

attctattag tattttcgat tagtattaaa ttcgttttag ttagtgatct cggctcagct   660

agtcctttct ttcgtgatga actgttggca cctgtcttac attttgtctc tgtggaccga   720

ggagaaaggg agctcagcgg caagaggatt gtaacatgag agaagcaagg aggtcaacct   780

1

```
ttttcaaata tacaacatgg gttctggcaa tgcaatgtgg ttggactctc atgtcgatct    840

gaatgaatca tcctttccac ggaggtaaat ctttgcctgc taggcaagag tatagcaaat    900

tacaaattct gtcttggtag ggcatgtatt tttattacta ttaaattgaa gtagttaatg    960

gtggggttac cattatcctt tttgtggtaa cgaatatgtg ttcctaagaa aagcaatttg   1020

tccatttttt cggggtctcg aaggggcgtg gaaacacata agaactcttg aattgaaatg   1080

gaaaaataga tgtaactcca gttacttcgg aaatggtaag atctttggcg caagaacgca   1140

agaggagggg ttgatccgta tcatcttgac ttggttctga tttctctatt ttttaataaa   1200

atcgagtcgg gttcttctcc tacccgtatc gaatagaaca tgcttagcca aatcttcttc   1260

atggaaaacc tgctttattt agatcgggaa aatcatatgg ttttatgaaa tcatgtgcta   1320

ttgctcgaat ccgtggtcaa tcctatttcc gatagagcag tt                      1362


<210>   2
<211>   1763
<212>   DNA
<213>   Glycine max

<400>   2
gacaatggaa tccaattttt ccataatttt cgtatccgta atagtgtgaa aagaaagcct     60

aactccaaga agttgtttaa gaatagtggc gttgagtttc ttgacccttt gccttaggat    120

tagtcagttc tatttctcga tggaggcaag ggatataact cagcggtaga gtgtcacctt    180

gacgtggtgg aagttatcag ttcgagcctg attatcccta aacccaatgt aagttttct    240

atttgtatgc cgtgatcgaa taataattga gaatggataa gaggctcgtg ggattacacg    300

aggggtgggg gggctatatt tctgggagcg aactccagtc gaatatgaag cgcctggata    360

caagttatgc cttggaatgg aagagaattc cgaatcagct ttgtctacga caaggaagc    420

tataagtaat gcaactagga atctcatgga gagttcgatc ctggctcagg atgaacgctg    480

gcggcatgcc ttacacatgc aagtcggacg ggaagtggtg tttccagtgg cggacgggtg    540

agtaacgcgt aagaacctac ccttgggagg ggaacaacag ctggaaacgg ctgctaatac    600

cccgtaggct gaggagcaaa aggaggaatc cgcccgagga ggggctcgcg tctgattagc    660

tagttggtga ggcaatagct taccaaggcg atgatcagta gctggtccga gaggatgatc    720

agccacactg ggactgagac acggcccaga ctcctacggg aggcagcagt ggggaatttt    780

ccgcaatggg cgaaagcctg acggagcaat gccgcgtgaa ggtagaaggc ctacgggtca    840

tgaacttctt ttcccggaga agaagcaatg acggtatccg gggaataagc atcggctaac    900
```

2

```
tctgtgccag cagccgcggt aagacagagg atgcaagcgt tatccggaat gattgggcgt      960

aaagcgtctg taggtggctt tttaagttcg ccgtcaaatc ccagggctca accctggaca     1020

ggcggtggaa actaccaagc tggagtacgg tagggggcaga gggaatttcc ggtggagcgg     1080

tgaaatgcgt agagatcgga aagaacacca acggcgaaag cactctgctg ggccgacact     1140

gacactgaga gacgaaagct aggggagcga atgggattag ataccccagt agtcctagcc     1200


gtaaacgatg gatactaggc gctgtgcgta tcgacccgtg caatgctgta gctaacgcgt     1260

taagtatccc gcctggggag tacgttcgca agaatgaaac tcaaaggaat tgacggggggc     1320

ccgcacaagc ggtggagcat gtggtttaat tcgatgcaaa gcgaagaacc ttaccagggc     1380

ttgacatgcc gcgaatcctc ttgaaagaga ggggtgcctt cgggaacgcg gacacaggtg     1440

gtgcatggct gtcgtcagct cgtgccgtaa ggtgttgggt taagtcccgc aacgagcgca     1500

accctcgtgt ttagttgcca acatttagtt tggaaccctg agcagactgc cggtgataag     1560

ccggaggaag gtgaggatga cgtcaagtca tcatgcccct tatgccctgg gcgacacacg     1620

tgctacaatg gacgggacaa aggatcgcga tcccgcgagg gtgagctaac tccaaaaacc     1680

cgtcctcagt tcggattgta ggctgcaact cgcctgcatg aagccggaat cgctagtaat     1740

cgccggtcag ccatacggcg gtg                                             1763


<210>  3
<211>  30
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic sequence OSSD3

<400>  3
ctaggagctc caccgccgta tggctgaccg                                        30


<210>  4
<211>  63
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic sequence OSSD5

<400>  4
gtcgaccatg gactagtcca ccgcggtggt ctagactcga ggacaatgga atccaatttt      60

tcc                                                                     63
```

```
<210>   5
<211>   50
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic sequence OSSG3

<400>   5
ctctccatgg gttaacaagc ttaactgctc tatcggaaat aggattgacc          50


<210>   6
<211>   39
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic sequence OSSG5

<400>   6
ctagtggtac cgatccaatc acgatcttct aataagaac                      39


<210>   7
<211>   40
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Synthetic sequence OSSG310

<400>   7
gaacctcctt gcttctctca tgttacaatc ctcttgccgc                     40


<210>   8
<211>   43
<212>   DNA
<213>   Artificial Sequence

<220>

<223>   Synthetic sequence OAAX3

<400>   8
ctcagtactc gagttatttg ccgactacct tggtgatctc gcc                 43


<210>   9
<211>   34
<212>   DNA
<213>   Artificial Sequence

<220>
```

<223> Synthetic sequence OAAN5

<400> 9
gaagcttcca tggcagaagc ggtgatcgcc gaag   34

<210> 10
<211> 1327
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence AADA312

<400> 10
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgagggggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat acgaagcgct tggatacagt   120

tgtagggagg gatccatggc agaagcggtg atcgccgaag tatcaactca actatcagag   180

gtagttggcg tcatcgagcg ccatctcgaa ccgacgttgc tggccgtaca tttgtacggc   240

tccgcagtgg atggcggcct gaagccacac agtgatattg atttgctggt tacggtgacc   300

gtaaggcttg atgaaacaac gcggcgagct ttgatcaacg accttttgga aacttcggct   360

tcccctggag agagcgagat tctccgcgct gtagaagtca ccattgttgt gcacgacgac   420

atcattccgt ggcgttatcc agctaagcgc gaactgcaat ttggagaatg gcagcgcaat   480

gacattcttg caggtatctt cgagccagcc acgatcgaca ttgatctggc tatcttgctg   540

acaaaagcaa gagaacatag cgttgccttg gtaggtccag cggcggagga actctttgat   600
ccggttcctg aacaggatct atttgaggcg ctaaatgaaa ccttaacgct atggaactcg   660
ccggttcctg aacaggatct atttgaggcg ctaaatgaaa ccttaacgct atggaactcg   660

ccgcccgact gggctggcga tgagcgaaat gtagtgctta cgttgtcccg catttggtac   720

agcgcagtaa ccggcaaaat cgcgccgaag gatgtcgctg ccgactgggc aatggagcgc   780

ctgccggccc agtatcagcc cgtcatactt gaagctagac aggcttatct tggacaagaa   840

gaagatcgct tggcctcgcg cgcagatcag ttggaagaat ttgtccacta cgtgaaaggc   900

gagatcacca aggtagtcgg caaataatct agagatcctg gcctagtcta taggaggttt   960

tgaaaagaaa ggagcaataa tcattttctt gttctatcaa gagggtgcta ttgctccttt   1020

cttttttttct ttttatttat ttactagtat tttacttaca tagactttttt tgtttacatt   1080

atagaaaaag aaggagaggt tattttcttg catttattca tgattgagta ttctattttg   1140

attttgtatt tgtttaaaat tgtagaaata gaacttgttt ctcttcttgc taatgttact   1200

atatctttt gatttttttt ttccaaaaaa aaaatcaaat tttgacttct tcttatctct   1260

5

```
tatctttgaa tatctcttat ctttgaaata ataatatcat tgaaataaga aagaagagct   1320

atattcg                                                             1327



<210> 11
<211> 1330
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence AADA166

<400> 11
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg    60

cagggatggc tatatttctg ggagcgaact ccgggcgaat acgaagcgct tggatacagt   120

tgtagggagg gatttatgga tcccgaagcg gtgatcgccg aagtatcaac tcaactatca   180

gaggtagttg gcgtcatcga gcgccatctc gaaccgacgt tgctggccgt acatttgtac   240

ggctccgcag tggatggcgg cctgaagcca cacagtgata ttgatttgct ggttacggtg   300

accgtaaggc ttgatgaaac aacgcggcga gctttgatca acgacctttt ggaaacttcg   360

gcttcccctg gagagagcga gattctccgc gctgtagaag tcaccattgt tgtgcacgac   420

gacatcattc cgtggcgtta tccagctaag cgcgaactgc aatttggaga atggcagcgc   480

aatgacattc ttgcaggtat cttcgagcca gccacgatcg acattgatct ggctatcttg   540

ctgacaaaag caagagaaca tagcgttgcc ttggtaggtc cagcggcgga ggaactcttt   600

gatccggttc ctgaacagga tctatttgag gcgctaaatg aaaccttaac gctatggaac   660

tcgccgcccg actgggctgg cgatgagcga aatgtagtgc ttacgttgtc ccgcatttgg   720

tacagcgcag taaccggcaa aatcgcgccg aaggatgtcg ctgccgactg gcaatggag    780

cgcctgccgg cccagtatca gcccgtcata cttgaagcta gacaggctta tcttggacaa   840

gaagaagatc gcttggcctc gcgcgcagat cagttggaag aatttgtcca ctacgtgaaa   900

ggcgagatca ccaaggtagt cggcaaataa tctagcgatc ctggcctagt ctataggagg   960

ttttgaaaag aaaggagcaa taatcatttt cttgttctat caagagggtg ctattgctcc  1020

tttctttttt tcttttattt tatttactag tattttactt acatagactt ttttgtttac  1080

attatagaaa aagaaggaga ggttattttc ttgcatttat tcatgattga gtattctatt  1140

ttgattttgt atttgtttaa aattgtagaa atagaacttg tttctcttct tgctaatgtt  1200

actatatctt tttgattttt tttttccaaa aaaaaaatca aattttgact tcttcttatc  1260

tcttatcttt gaatatctct tatctttgaa ataataatat cattgaaata agaaagaaga  1320
```

6

gctatattcg   1330

<210> 12
<211> 1746
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence AOA170

<400> 12
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa   120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa   180

ggagatatac ccatgggcaa gggcgaggaa ctgttcactg gcgtggtccc aatcttaagc   240

tccatggaat ccctgacgtt acaacccatc gcgcgggtcg atggcgccat taatttacct   300

ggctccaaaa gtgtttcaaa ccgtgctttg ctcctggcgg ctttagcttg tggtaaaacc   360

gctctgacga atctgctgga tagcgatgac gtccgccata tgctcaatgc cctgagcgcg   420

ttggggatca attacaccct ttctgccgat cgcacccgct gtgatatcac gggtaatggc   480

ggcgcattac gtgcgccagg cgctctggaa ctgtttctcg gtaatgccgg aatcgcgatg   540

cgttcgttag cggcagcgct atgtctgggg caaaatgaga tagtgttaac cggcgaaccg   600

cgtatgaaag agcgtccgat aggccatctg gtcgattcgc tgcgtcaggg cggggcgaat   660

attgattacc tggagcagga aaactatccg cccctgcgtc tgcgcggcgg ttttaccggc   720

ggcgacattg aggttgatgg tagcgtttcc agccagttcc tgaccgctct gctgatgacg   780

gcgccgctgg cccctaaaga cacaattatt cgcgttaaag cgaactggt atcaaaacct   840

tacatcgata tcacgctaaa tttaatgaaa acctttggcg tggagatagc gaaccaccac   900

taccaacaat ttgtcgtgaa gggaggtcaa cagtatcact ctccaggtcg ctatctggtc   960

gagggcgatg cctcgtcagc gtcctatttt ctcgccgctg gggcgataaa aggcggcacg   1020

gtaaaagtga ccggaattgg ccgcaaaagt atgcagggcg atattcgttt tgccgatgtg   1080

ctggagaaaa tgggcgcgac cattacctgg ggcgatgatt ttattgcctg cacgcgcggt   1140

gaattgcacg ccatagatat ggatatgaac catattccgg atgcggcgat gacgattgcc   1200

accacggcgc tgtttgcgaa aggaaccacg acgttgcgca atatttataa ctggcgagtg   1260

7

```
aaagaaaccg atcgcctgtt cgcgatggcg accgagctac gtaaagtggg cgctgaagtc   1320

gaagaagggc acgactatat tcgtatcacg ccgccggcga agctccaaca cgcggatatt   1380

ggcacgtaca acgaccaccg tatggcgatg tgcttctcac tggtcgcact gtccgatacg   1440

ccagttacga tcctggaccc taaatgtacc gcaaaaacgt tccctgatta tttcgaacaa   1500

ctggcgcgaa tgagtacgcc tgcctaattt aaatagacat tagcagataa attagcagga   1560

aataaagaag gataaggaga aagaactcaa gtaattatcc ttcgttctct taattgaatt   1620

gcaattaaac tcggcccaat cttttactaa aaggattgag ccgaatacaa caaagattct   1680

attgcatata ttttgactaa gtatatactt acctagatat acaagatttg aaatacaaaa   1740

tctagc                                                              1746
```

<210> 13
<211> 1694
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence AROA319

<400> 13
```
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa   120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa   180

ggagatatac ccatggaatc cctgacgtta caacccatcg cgcgggtcga tggcgccatt   240

aatttacctg gctccaaaag tgtttcaaac cgtgctttgc tcctggcggc tttagcttgt   300

ggtaaaaccg ctctgacgaa tctgctggat agcgatgacg tccgccatat gctcaatgcc   360

ctgagcgcgt tggggatcaa ttacaccctt tctgccgatc gcacccgctg tgatatcacg   420

ggtaatggcg gcgcattacg tgcgccaggc gctctggaac tgtttctcgg taatgccgga   480

atcgcgatgc gttcgttagc ggcagcgcta tgtctggggc aaaatgagat agtgttaacc   540

ggcgaaccgc gtatgaaaga gcgtccgata ggccatctgg tcgattcgct gcgtcagggc   600

ggggcgaata ttgattacct ggagcaggaa aactatccgc ccctgcgtct gcgcggcggt   660

tttaccggcg gcgacattga ggttgatggt agcgtttcca gccagttcct gaccgctctg   720

ctgatgacgg cgccgctggc ccctaaagac acaattattc gcgttaaagg cgaactggta   780

tcaaaacctt acatcgatat cacgctaaat ttaatgaaaa cctttggcgt ggagatagcg   840

aaccaccact accaacaatt tgtcgtgaag ggaggtcaac agtatcactc tccaggtcgc   900
```

```
tatctggtcg agggcgatgc ctcgtcagcg tcctattttc tcgccgctgg ggcgataaaa    960

ggcggcacgg taaaagtgac cggaattggc cgcaaaagta tgcagggcga tattcgtttt   1020

gccgatgtgc tggagaaaat gggcgcgacc attacctggg gcgatgattt tattgcctgc   1080

acgcgcggtg aattgcacgc catagatatg gatatgaacc atattccgga tgcggcgatg   1140

acgattgcca ccacggcgct gtttgcgaaa ggaaccacga cgttgcgcaa tatttataac   1200

tggcgagtga agaaaccga tcgcctgttc gcgatggcga ccgagctacg taaagtgggc    1260

gctgaagtcg aagaagggca cgactatatt cgtatcacgc cgccggcgaa gctccaacac   1320

gcggatattg cacgtacaa cgaccaccgt atggcgatgt gcttctcact ggtcgcactg    1380

tccgatacgc cagttacgat cctggaccct aaatgtaccg caaaaacgtt ccctgattat   1440

ttcgaacaac tggcgcgaat gagtacgcct gcctaattta aatagacatt agcagataaa   1500

ttagcaggaa ataaagaagg ataaggagaa agaactcaag taattatcct tcgttctctt   1560

aattgaattg caattaaact cggcccaatc ttttactaaa aggattgagc cgaatacaac   1620

aaagattcta ttgcatatat tttgactaag tatatactta cctagatata caagatttga   1680

aatacaaaat ctag                                                      1694


<210>  14
<211>  553
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence HELIO312

<400>  14
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg     60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa    120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgtttta actttaagaa   180

ggagatatac ccatggataa attaattgga tcttgtgtat ggggagctgt aaattatact    240

tctgattgta atggagaatg taaaagaaga ggatataaag gaggacattg tggatctttt    300

gctaatgtaa attgttggtg tgaaacttaa tctagaggaa atagacatta gcagataaat    360

tagcaggaaa taaagaagga taaggagaaa gaactcaagt aattatcctt cgttctctta    420

attgaattgc aattaaactc ggcccaatct tttactaaaa ggattgagcc gaatacaaca    480

aagattctat tgcatatatt ttgactaagt atatacttac ctagatatac aagatttgaa    540
```

9

atacaaaatc tag   553

<210> 15
<211> 1487
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence HPPD323

<400> 15
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa   120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa   180

ggagatatac ccatggcaga tctatacgaa aacccaatgg gcctgatggg ctttgaattc   240

atcgaattcg cgtcgccgac gccgggtacc ctggagccga tcttcgagat catgggcttc   300

accaaagtcg cgacccaccg ttccaagaac gtgcacctgt accgccaggg cgagatcaac   360

ctgatcctca caacgagcc caacagcatc gcctcctact ttgcggccga acacggcccg   420

tcggtgtgcg gcatggcgtt ccgcgtgaag gactcgcaaa aggcctacaa ccgcgccctg   480

gaactcggcg cccagccgat ccatattgac accgggccga tggaattgaa cctgccggcg   540

atcaagggca tcggcggcgc gccgttgtac ctgatcgacc gtttcggcga aggcagctcg   600

atctacgaca tcgacttcgt gtacctcgaa ggtgtggagc gcaatccggt cggtgcaggt   660

ctcaaagtca tcgaccacct gacccacaac gtctatcgcg gccgcatggt ctactgggcc   720

aacttctacg agaaattgtt caacttccgt gaagcgcgtt acttcgatat caagggcgag   780

tacaccggcc tgacttccaa ggccatgagt gcgccggacg gcatgatccg catcccgctg   840

aacgaagagt cgtccaaggg cgcggggcag atcgaagagt cctgatgca gttcaacggc   900

gaaggcatcc agcacgtggc gttcctcacc gacgacctgg tcaagacctg ggacgcgttg   960

aagaaaatcg gcatgcgctt catgaccgcg ccgccagaca cttattacga aatgctcgaa   1020

ggccgcctgc ctgaccacgg cgagccggtg gatcaactgc aggcacgcgg tatcctgctg   1080

gacggatctt ccgtggaagg cgacaaacgc ctgctgctgc agatcttctc ggaaaccctg   1140

atgggcccgg tgttcttcga attcatccag cgcaagggcg acgatgggtt tggcgagggc   1200

aacttcaagg cgctgttcga gtccatcgaa cgtgaccagg tgcgtcgtgg tgtattgacc   1260

gccgattaat ttaaatagac attagcagat aaattagcag gaaataaaga aggataagga   1320

gaaagaactc aagtaattat ccttcgttct cttaattgaa ttgcaattaa actcggccca   1380

atcttttact aaaaggattg agccgaatac aacaaagatt ctattgcata tattttgact   1440

aagtatatac ttacctagat atacaagatt tgaaatacaa aatctag   1487

<210> 16
<211> 3929
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence CRYL325

<400> 16
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgagggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa   120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa   180

ggagatatac ccatgggcaa gggcgaggaa ctgttcactg gcgtggtccc aatcttaagc   240

tccatggata caatccgaa catcaatgaa tgcattcctt ataattgttt aagtaaccct   300

gaagtagaag tattaggtgg agaaagaata gaaactggtt acaccccaat cgatatttcc   360

ttgtcgctaa cgcaatttct tttgagtgaa tttgttcccg gtgctggatt tgtgttagga   420

ctagttgata taatatgggg aatttttggt ccctctcaat gggacgcatt tcttgtacaa   480

attgaacagt taattaacca aagaatagaa gaattcgcta ggaaccaagc catttctaga   540

ttagaaggac taagcaatct ttatcaaatt tacgcagaat cttttagaga gtgggaagca   600

gatcctacta atccagcatt aagagaagag atgcgtattc aattcaatga catgaacagt   660

gcccttacaa ccgctattcc tcttttgca gttcaaaatt atcaagttcc tcttttatca   720

gtatatgttc aagctgcaaa tttacattta tcagttttga gagatgtttc agtgtttgga   780

caaaggtggg gatttgatgc cgcgactatc aatagtcgtt ataatgattt aactaggctt   840

attggcaact atacagatca tgctgtacgc tggtacaata cgggattaga gcgtgtatgg   900

ggaccggatt ctagagattg gataagatat aatcaattta gaagagaatt aacactaact   960

gtattagata tcgtttctct atttccgaac tatgatagta gaacgtatcc aattcgaaca   1020

gtttcccaat taacaagaga aatttataca aacccagtat tagaaaattt tgatggtagt   1080

tttcgaggct cggctcaggg catagaagga agtattagga gtccacattt gatggatata   1140

cttaacagta taaccatcta tacggatgct catagaggag aatattattg gtcagggcat   1200

caaataatgg cttctcctgt agggtttttcg gggccagaat tcactttttcc gctatatgga   1260

```
actatgggaa atgcagctcc acaacaacgt attgttgctc aactaggtca gggcgtgtat    1320

agaacattat cgtccacttt atatagaaga ccttttaata tagggataaa taatcaacaa    1380

ctatctgttc ttgacgggac agaatttgct tatggaacct cctcaaattt gccatccgct    1440

gtatacagaa aaagcggaac ggtagattcg ctggatgaaa taccgccaca gaataacaac    1500

gtgccaccta ggcaaggatt tagtcatcga ttaagccatg tttcaatgtt cgttcaggc     1560

tttagtaata gtagtgtaag tataataaga gctcctatgt tctcttggat acatcgtagt    1620

gctgaattta ataatataat tccttcatca caaattacac aaataccttt aacaaaatct    1680

actaatcttg gctctggaac ttctgtcgtt aaaggaccag gatttacagg aggagatatt    1740

cttcgaagaa cttcacctgg ccagatttca accttaagag taaatattac tgcaccatta    1800

tcacaaagat atcgggtaag aattcgctac gcttctacca caaatttaca attccataca    1860

tcaattgacg gaagacctat taatcagggg aatttttcag caactatgag tagtgggagt    1920

aatttacagt ccggaagctt taggactgta ggttttacta ctccgtttaa cttttcaaat    1980

ggatcaagtg tatttacgtt aagtgctcat gtcttcaatt caggcaatga agtttatata    2040

gatcgaattg aatttgttcc ggcagaagta acctttgagg cagaatatga tttagaaaga    2100

gcacaaaagg cggtgaatga gctgtttact tcttccaatc aaatcgggtt aaaaacagat    2160

gtgacggatt atcatattga tcaagtatcc aatttagttg agtgtttatc tgatgaattt    2220

tgtctggatg aaaaaaaaga attgtccgag aaagtcaaac atgcgaagcg acttagtgat    2280

gagcggaatt tacttcaaga tccaaacttt agagggatca atagacaact agaccgtggc    2340

tggagaggaa gtacggatat taccatccaa ggaggcgatg acgtattcaa agagaattac    2400

gttacgctat tgggtacctt tgatgagtgc tacttaacgt atttatatca aaaaatagat    2460

gagtcgaaat taaaagccta tacccgttac caattaagag ggtatatcga agatagtcaa    2520

gacttagaaa tctatttaat tcgctacaat gccaaacacg aaacagtaaa tgtgccaggt    2580

acgggttcct tatggcgcct ttcagcccca agtccaatcg aaaatgtgc ccatcattcc     2640

catcatttct ccttggacat tgatgttgga tgtacagact aaatgagga cttaggtgta     2700

tgggtgatat tcaagattaa gacgcaagat ggccatgcaa gactaggaaa tctagaattt    2760

ctcgaagaga aaccattagt aggagaagca ctagctcgtg tgaaaagagc ggagaaaaaa    2820

tggagagaca aacgtgaaaa attggaatgg gaaacaaata ttgtttataa agaggcaaaa    2880

gaatctgtag atgctttatt tgtaaactct caatatgata gattacaagc ggataccaac    2940

atcgcgatga ttcatgcggc agataaacgc gttcatagca ttcgagaagc ttatctgcct    3000
```

12

```
gagctgtctg tgattccggg tgtcaatgcg gctattttg aagaattaga agggcgtatt    3060

ttcactgcat tctccctata tgatgcgaga aatgtcatta aaaatggtga ttttaataat    3120

ggcttatcct gctggaacgt gaaagggcat gtagatgtag aagaacaaaa caaccaccgt    3180

tcggtccttg ttgttccgga atgggaagca gaagtgtcac aagaagttcg tgtctgtccg    3240

ggtcgtggct atatccttcg tgtcacagcg tacaaggagg gatatggaga aggttgcgta    3300

accattcatg agatcgagaa caatacagac gaactgaagt ttagcaactg tgtagaagag    3360

gaagtatatc caaacaacac ggtaacgtgt aatgattata ctgcgactca agaagaatat    3420

gagggtacgt acacttctcg taatcgagga tatgacggag cctatgaaag caattcttct    3480

gtaccagctg attatgcatc agcctatgaa gaaaaagcat atacagatgg acgaagagac    3540

aatccttgtg aatctaacag aggatatggg gattacacac cactaccagc tggctatgtg    3600

acaaaagaat tagagtactt cccagaaacc gataaggtat ggattgagat cggagaaacg    3660

gaaggaacat tcatcgtgga cagcgtggaa ttacttctta tggaggaata atttaaatag    3720

acattagcag ataaattagc aggaaataaa gaaggataag gagaaagaac tcaagtaatt    3780

atccttcgtt ctcttaattg aattgcaatt aaactcggcc caatctttta ctaaaaggat    3840

tgagccgaat acaacaaaga ttctattgca tatattttga ctaagtatat acttacctag    3900

atatacaaga tttgaaatac aaaatctag    3929
```

```
<210>    17
<211>    3878
<212>    DNA
<213>    Artificial sequence

<220>
<223>    Synthetic sequence CRYL327

<400>    17
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg    60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa    120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa    180

ggagatatac ccatggataa caatccgaac atcaatgaat gcattcctta taattgttta    240

agtaaccctg aagtagaagt attaggtgga gaaagaatag aaactggtta caccccaatc    300

gatatttcct tgtcgctaac gcaatttctt ttgagtgaat ttgttcccgg tgctggattt    360

gtgttaggac tagttgatat aatatgggga attttttggtc cctctcaatg ggacgcattt    420
```

13

```
cttgtacaaa ttgaacagtt aattaaccaa agaatagaag aattcgctag gaaccaagcc    480

atttctagat tagaaggact aagcaatctt tatcaaattt acgcagaatc ttttagagag    540

tgggaagcag atcctactaa tccagcatta agagaagaga tgcgtattca attcaatgac    600

atgaacagtg cccttacaac cgctattcct cttttttgcag ttcaaaatta tcaagttcct    660

cttttatcag tatatgttca agctgcaaat ttacatttat cagttttgag agatgtttca    720

gtgtttggac aaaggtgggg atttgatgcc gcgactatca atagtcgtta taatgattta    780

actaggctta ttggcaacta tacagatcat gctgtacgct ggtacaatac gggattagag    840

cgtgtatggg gaccggattc tagagattgg ataagatata atcaatttag aagagaatta    900

acactaactg tattagatat cgtttctcta tttccgaact atgatagtag aacgtatcca    960

attcgaacag tttcccaatt aacaagagaa atttatacaa acccagtatt agaaaatttt   1020

gatggtagtt ttcgaggctc ggctcagggc atagaaggaa gtattaggag tccacatttg   1080

atggatatac ttaacagtat aaccatctat acggatgctc atagaggaga atattattgg   1140

tcagggcatc aaataatggc ttctcctgta gggttttcgg ggccagaatt cactttccg    1200

ctatatggaa ctatgggaaa tgcagctcca caacaacgta ttgttgctca actaggtcag   1260

ggcgtgtata gaacattatc gtccacttta tatagaagac cttttaatat agggataaat   1320

aatcaacaac tatctgttct tgacgggaca gaatttgctt atggaacctc ctcaaatttg   1380

ccatccgctg tatacagaaa aagcggaacg gtagattcgc tggatgaaat accgccacag   1440

aataacaacg tgccacctag gcaaggattt agtcatcgat taagccatgt ttcaatgttt   1500

cgttcaggct ttagtaatag tagtgtaagt ataataagag ctcctatgtt ctcttggata   1560

catcgtagtg ctgaatttaa taatataatt ccttcatcac aaattacaca aataccttta   1620

acaaaatcta ctaatcttgg ctctggaact tctgtcgtta aaggaccagg atttacagga   1680

ggagatattc ttcgaagaac ttcacctggc cagatttcaa ccttaagagt aaatattact   1740

gcaccattat cacaaagata tcgggtaaga attcgctacg cttctaccac aaatttacaa   1800

ttccatacat caattgacgg aagacctatt aatcagggga atttttcagc aactatgagt   1860

agtgggagta atttacagtc cggaagcttt aggactgtag gttttactac tccgtttaac   1920

ttttcaaatg gatcaagtgt atttacgtta agtgctcatg tcttcaattc aggcaatgaa   1980

gtttatatag atcgaattga atttgttccg gcagaagtaa cctttgaggc agaatatgat   2040

ttagaaagag cacaaaaggc ggtgaatgag ctgtttactt cttccaatca aatcgggtta   2100

aaaacagatg tgacggatta tcatattgat caagtatcca atttagttga gtgtttatct   2160
```

14

```
gatgaatttt gtctggatga aaaaaaagaa ttgtccgaga aagtcaaaca tgcgaagcga    2220

cttagtgatg agcggaattt acttcaagat ccaaacttta gagggatcaa tagacaacta    2280

gaccgtggct ggagaggaag tacggatatt accatccaag gaggcgatga cgtattcaaa    2340

gagaattacg ttacgctatt gggtaccttt gatgagtgct acttaacgta tttatatcaa    2400

aaaatagatg agtcgaaatt aaaagcctat acccgttacc aattaagagg gtatatcgaa    2460

gatagtcaag acttagaaat ctatttaatt cgctacaatg ccaaacacga aacagtaaat    2520

gtgccaggta cgggttcctt atggcgcctt tcagccccaa gtccaatcgg aaaatgtgcc    2580

catcattccc atcatttctc cttggacatt gatgttggat gtacagactt aaatgaggac    2640

ttaggtgtat gggtgatatt caagattaag acgcaagatg gccatgcaag actaggaaat    2700

ctagaatttc tcgaagagaa accattagta ggagaagcac tagctcgtgt gaaaagagcg    2760

gagaaaaaat ggagagacaa acgtgaaaaa ttggaatggg aaacaaatat tgtttataaa    2820

gaggcaaaag aatctgtaga tgctttattt gtaaactctc aatatgatag attacaagcg    2880

gataccaaca tcgcgatgat tcatgcggca gataaacgcg ttcatagcat tcgagaagct    2940

tatctgcctg agctgtctgt gattccgggt gtcaatgcgg ctatttttga agaattagaa    3000

gggcgtattt tcactgcatt ctccctatat gatgcgagaa atgtcattaa aaatggtgat    3060

tttaataatg gcttatcctg ctggaacgtg aaagggcatg tagatgtaga agaacaaaac    3120

aaccaccgtt cggtccttgt tgttccggaa tgggaagcag aagtgtcaca agaagttcgt    3180

gtctgtccgg gtcgtggcta tatccttcgt gtcacagcgt acaaggaggg atatggagaa    3240

ggttgcgtaa ccattcatga gatcgagaac aatacagacg aactgaagtt tagcaactgt    3300

gtagaagagg aagtatatcc aaacaacacg gtaacgtgta atgattatac tgcgactcaa    3360

gaagaatatg agggtacgta cacttctcgt aatcgaggat atgacggagc ctatgaaagc    3420

aattcttctg taccagctga ttatgcatca gcctatgaag aaaaagcata tacagatgga    3480

cgaagagaca atccttgtga atctaacaga ggatatgggg attacacacc actaccagct    3540

ggctatgtga caaaagaatt agagtacttc ccagaaaccg ataaggtatg gattgagatc    3600

ggagaaacgg aaggaacatt catcgtggac agcgtggaat tacttcttat ggaggaataa    3660

tttaaataga cattagcaga taaattagca ggaaataaag aaggataagg agaaagaact    3720

caagtaatta tccttcgttc tcttaattga attgcaatta aactcggccc aatctttac     3780

taaaaggatt gagccgaata caacaaagat tctattgcat atattttgac taagtatata    3840
```

15

cttacctaga tatacaagat ttgaaataca aaatctag   3878

<210> 18

<211> 2261
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence CRYS329

<400> 18
gctcccccgc cgtcgttcaa tgagaatgga taagaggctc gtgggattga cgtgaggggg   60

cagggatggc tatatttctg ggagcgaact ccgggcgaat actgaagcgc ttggatacaa   120

gttatccttg gaaggaaaga caattccgaa tctagaaata attttgttta actttaagaa   180

ggagatatac ccatggataa caatccgaac atcaatgaat gcattcctta taattgttta   240

agtaaccctg aagtagaagt attaggtgga gaaagaatag aaactggtta caccccaatc   300

gatatttcct tgtcgctaac gcaatttctt ttgagtgaat ttgttcccgg tgctggattt   360

gtgttaggac tagttgatat aatatgggga atttttggtc cctctcaatg ggacgcattt   420

cttgtacaaa ttgaacagtt aattaaccaa agaatagaag aattcgctag gaaccaagcc   480

atttctagat tagaaggact aagcaatctt tatcaaattt acgcagaatc ttttagagag   540

tgggaagcag atcctactaa tccagcatta agagaagaga tgcgtattca attcaatgac   600

atgaacagtg cccttacaac cgctattcct cttttttgcag ttcaaaatta tcaagttcct   660

cttttatcag tatatgttca agctgcaaat ttacatttat cagttttgag agatgtttca   720

gtgtttggac aaaggtgggg atttgatgcc gcgactatca atagtcgtta taatgattta   780

actaggctta ttggcaacta tacagatcat gctgtacgct ggtacaatac gggattagag   840

cgtgtatggg gaccggattc tagagattgg ataagatata atcaatttag aagagaatta   900

acactaactg tattagatat cgtttctcta tttccgaact atgatagtag aacgtatcca   960

attcgaacag tttcccaatt aacaagagaa atttatacaa acccagtatt agaaaatttt   1020

gatggtagtt ttcgaggctc ggctcagggc atagaaggaa gtattaggag tccacatttg   1080

atggatatac ttaacagtat aaccatctat acggatgctc atagaggaga atattattgg   1140

tcagggcatc aaataatggc ttctcctgta gggttttcgg ggccagaatt cacttttccg   1200

ctatatggaa ctatgggaaa tgcagctcca caacaacgta ttgttgctca actaggtcag   1260

ggcgtgtata gaacattatc gtccactttta tatagaagac cttttaatat agggataaat   1320

16

aatcaacaac tatctgttct tgacgggaca gaatttgctt atggaacctc ctcaaatttg   1380

ccatccgctg tatacagaaa aagcggaacg gtagattcgc tggatgaaat accgccacag   1440

aataacaacg tgccacctag gcaaggattt agtcatcgat taagccatgt ttcaatgttt   1500

cgttcaggct ttagtaatag tagtgtaagt ataataagag ctcctatgtt ctcttggata   1560

catcgtagtg ctgaatttaa taatataatt ccttcatcac aaattacaca ataccttta   1620

acaaaatcta ctaatcttgg ctctggaact tctgtcgtta aaggaccagg atttacagga   1680

ggagatattc ttcgaagaac ttcacctggc cagatttcaa ccttaagagt aaatattact   1740

gcaccattat cacaaagata tcgggtaaga attcgctacg cttctaccac aaatttacaa   1800

ttccatacat caattgacgg aagacctatt aatcagggga atttttcagc aactatgagt   1860

agtgggagta atttacagtc cggaagcttt aggactgtag gttttactac tccgtttaac   1920

ttttcaaatg gatcaagtgt atttacgtta agtgctcatg tcttcaattc aggcaatgaa   1980

gtttatatag atcgaattga atttgttccg gcagaagtaa cctttgaggc agaatatgat   2040

taatttaaat agacattagc agataaatta gcaggaaata aagaaggata aggagaaaga   2100

actcaagtaa ttatccttcg ttctcttaat tgaattgcaa ttaaactcgg cccaatcttt   2160

tactaaaagg attgagccga atacaacaaa gattctattg catatatttt gactaagtat   2220

atacttacct agatatacaa gatttgaaat acaaaatcta g   2261

<210> 19
<211> 48
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OTPRRNC5

<400> 19
caattgtcgc gagaattcgc tagcggcgcc gctcccccgc cgtcgttc   48

<210> 20
<211> 59
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OTPRRNC3

<400> 20
atcgatccgc gggagctcgg taccatgcat cgtctagatt cggaattgtc tttccttcc   59

17

<210> 21
<211> 57
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OG10L5

<400> 21
tatctagaaa taattttgtt taactttaag aaggagatat acccatgggc aagggcg   57

<210> 22
<211> 67
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OPGFP3

<400> 22
ggatgcattg cttaagattg ggaccacgcc agtgaacagt tcctcgccct tgcccatggg   60

tatatct   67

<210> 23
<211> 36
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OAROADB5

<400> 23
gccttaagct ccatggaatc cctgacgtta caaccc   36

<210> 24
<211> 38
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence ORAOADB3

<400> 24
gcgatgcata atttaaatta ggcaggcgta ctcattcg   38

<210> 25
<211> 40
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic sequence OSMC5

<400> 25
gaaagcttcg gaccgtagtt taaacaggcc catatggcct   40

<210> 26
<211> 39
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OSMC3

<400> 26
smcgactcga gttaattaat cggcgcgcca ggccatatg   39

<210> 27
<211> 48
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequenceOSMC51

<400> 27
gagcggccgc ctcgagcgga ccgtagttta aacaggccca tatggcct   48

<210> 28
<211> 36
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OSMC31

<400> 28
gaaagctttt aattaatcgg cgcgccaggc catatg   36

<210> 29
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OHPPD5

<400> 29
gccttaagct ccatggcaga tctatacgaa aacccaatgg gc   42

<210> 30
<211> 43
<212> DNA

19

<213> Artificial sequence

<220>
<223> Synthetic sequence OHPPD3

<400> 30
gccatttaaa ttaatcggcg gtcaatacac cacgacgcac ctg   43

<210> 31
<211> 37
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OCRYWT5

<400> 31
gccttaagct ccatggataa caatccgaac atcaatg   37

<210> 32
<211> 47
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OCRYWTL3

<400> 32
gccatttaaa ttattcctcc ataagaagta attccacgct gtccacg   47

<210> 33
<211> 49
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence OCRYWTC3

<400> 33
gccatttaaa ttaatcatat tctgcctcaa aggttacttc tgccggaac   49

<210> 34
<211> 23
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic sequence P1

<400> 34
cgtatcgaat agaacatgct tag   23

```
<210>  35
<211>  22
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P2

<400>  35
acaccatgga taaattaatt gg                                              22


<210>  36
<211>  25
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P3

<400>  36
cctctagatt aagtttcaca ccaac                                          25


<210>  37
<211>  24

<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P4

<400>  37
cgtcatactt gaagctagac aggc                                           24


<210>  38
<211>  43·
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P5

<400>  38
ctcagtactc gagttatttg ccgactacct tggtgatctc gcc                      43


<210>  39
<211>  24
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P6
```

```
<400>  39
gttaaggtaa cgacttcggc atgg                                              24


<210>  40
<211>  24
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P7

<400>  40
catgggttct ggcaatgcaa tgtg                                              24


<210>  41
<211>  26
<212>  DNA
<213>  Artificial sequence

<220>
<223>  Synthetic sequence P8

<400>  41
caggatcgaa ctctccatga gattcc                                            26
```